

MODULE 27105

FLOOR SYSTEMS

(27105 LESSON 3)

SLIDE PRESENTATION

SLIDE 28

5.0.0 Laying Out and Constructing a Platform Floor Assembly

- Framing of the floor system is usually done before the foundation is backfilled because the frame helps the foundation withstand the soil pressure.
- The text lists the correct sequence for building a floor. The first step is to make sure the foundation is square.

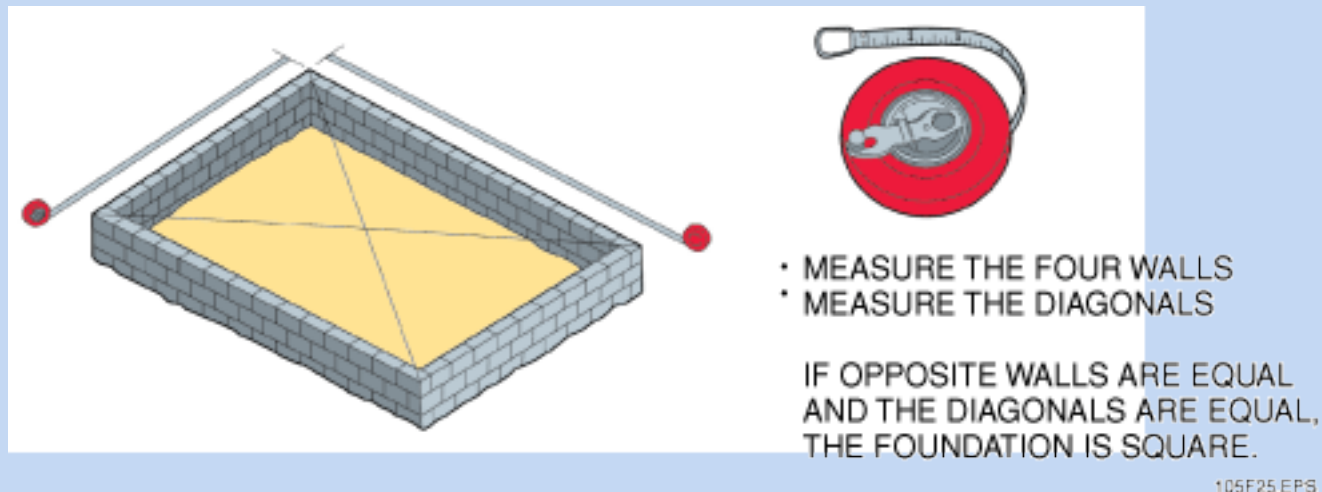


Figure 25 Checking the foundation for squareness.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- A chalk line is snapped along the foundation to mark the inside and outside edges of the sill.

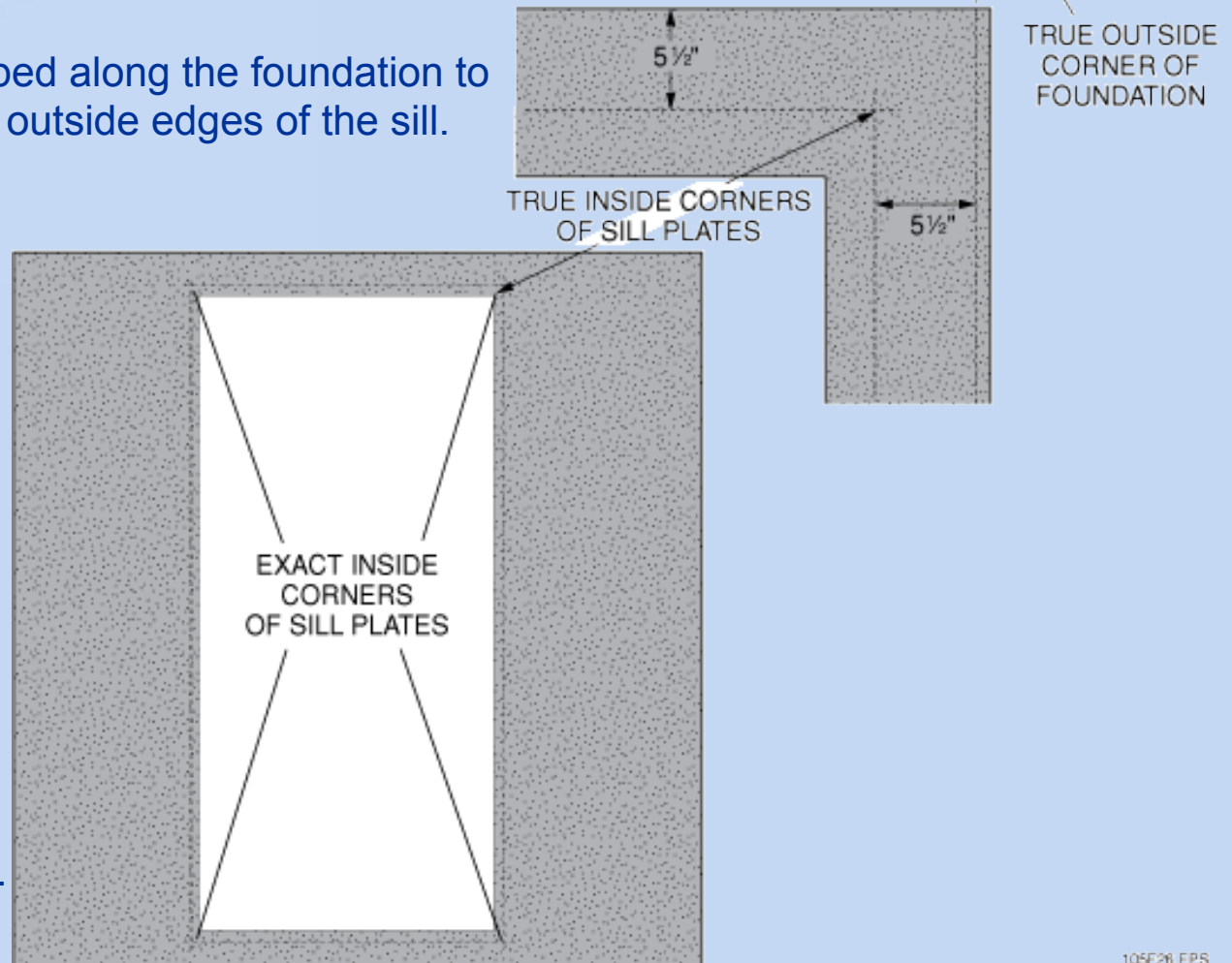


Figure 25 Checking the foundation for squareness.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- When the sill is placed, there must be an anchor bolt within 12 inches of the end of any plate and sill plates cannot butt together over an opening in the foundation.
- Drilling locations for anchor bolts can be established by placing the plate against the bolts and marking them with a combination square.
- It is important to make sure the sill is perfectly level. A transit or builder's level is preferred over a spirit level for this task. Any deviations from level must be corrected.

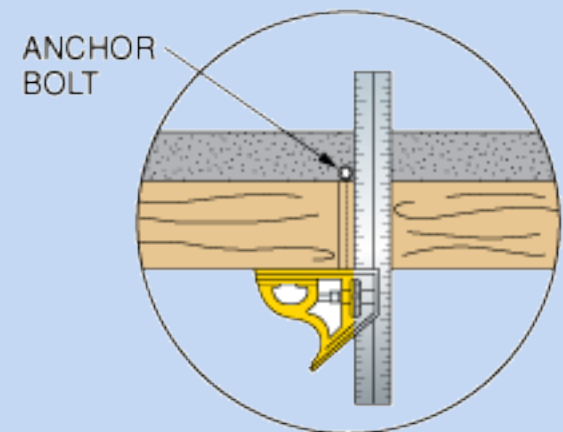
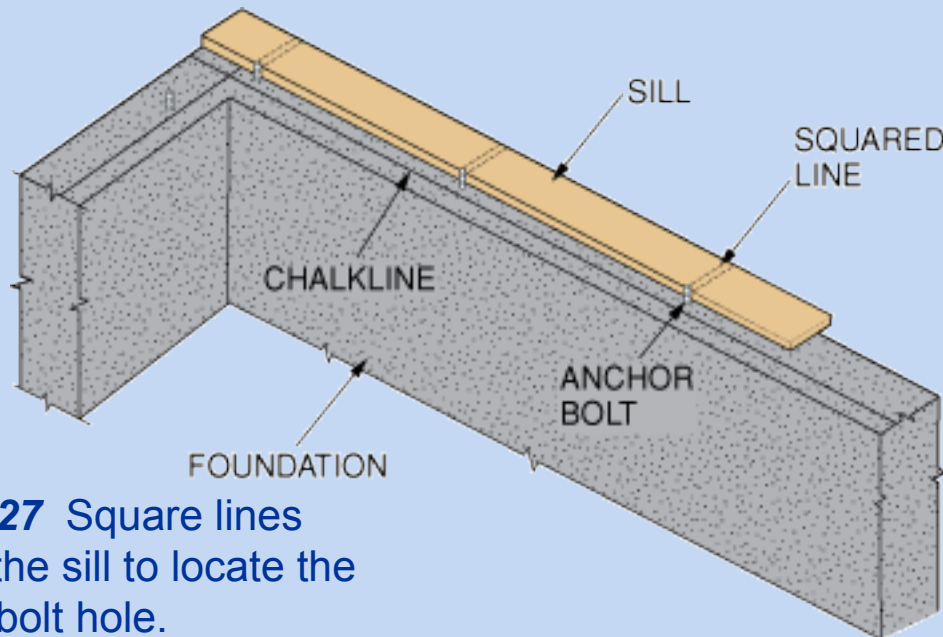


Figure 27 Square lines across the sill to locate the anchor bolt hole.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- If a built-up girder is used, the joints in the girder must fall over the support columns and the crown must be up.
- 16-penny nails are used to attach the header to the joists; 8-penny nails are used to install wood cross-bridging and subflooring.
- Building codes specify nail spacing and locations.

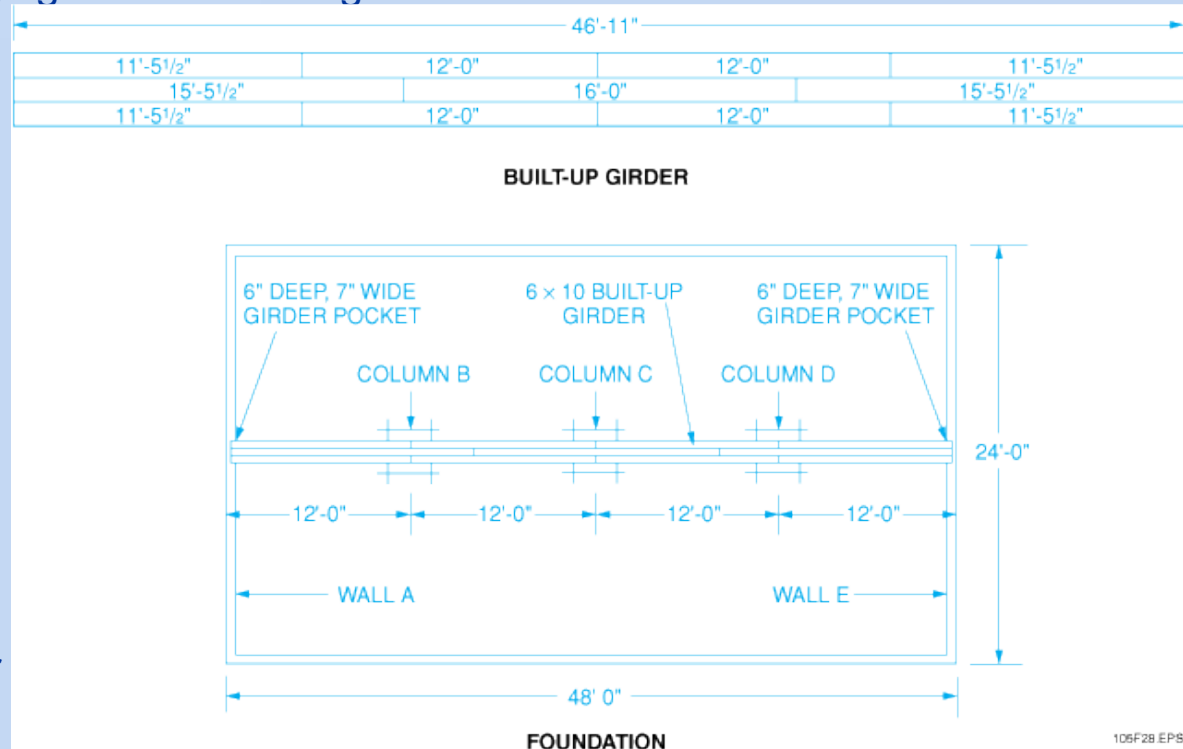


Figure 28 Example girder and support column data.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- The locations of joists and girders are marked on the sill using a speed square or combination square.
- To lay out a sill for girders and joists, start by measuring 15-1/4 inches from the end of the sill.
- Once the joist and girder locations are marked, the locations of double joists and trimmers are marked.

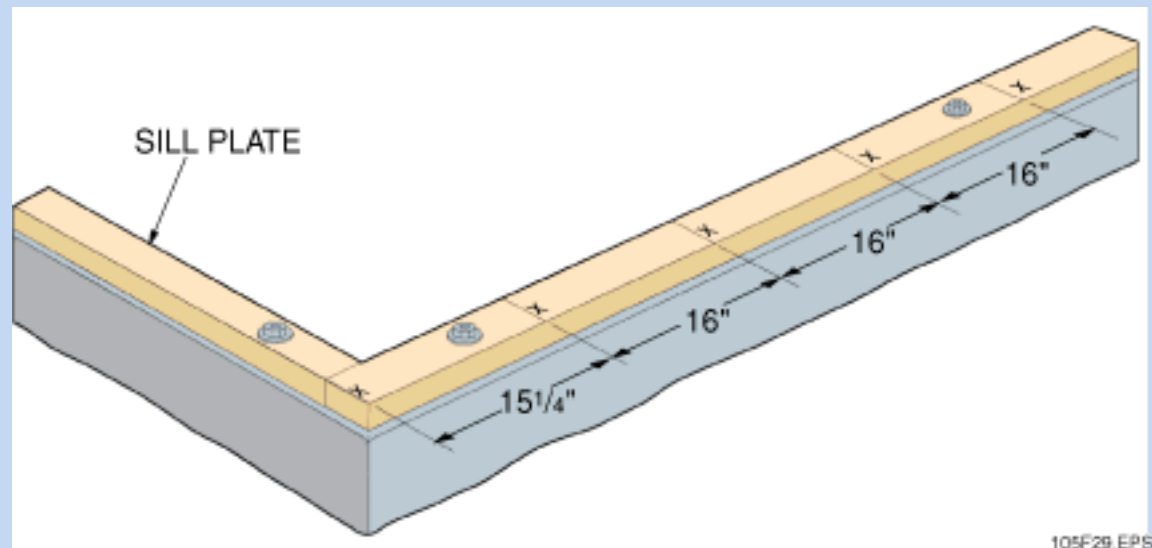


Figure 29 Marking the sill for joist locations.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- If a load-bearing partition runs parallel to the joists, a double joist is required. Blocking may be needed between the joists to leave room for piping and electrical service runs.
- Double joists are needed for a variety of situations where extra loads are placed on the joists.

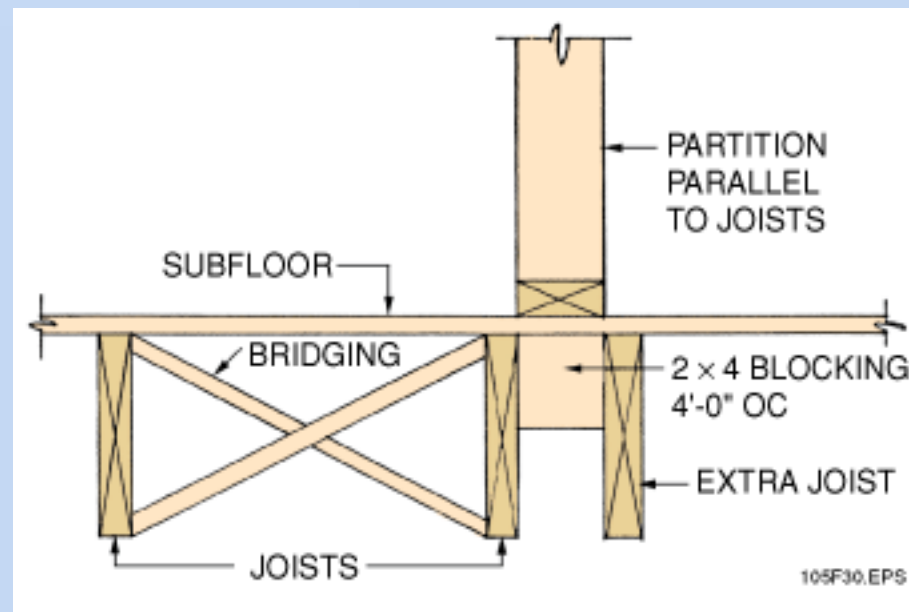
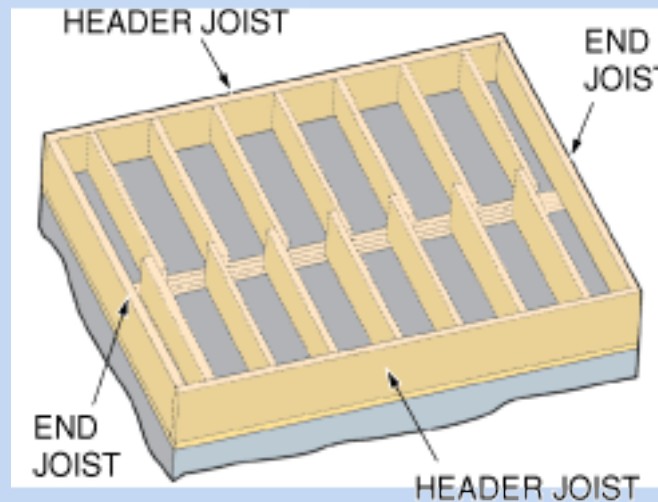


Figure 30 Double joists at a partition that runs parallel to the joists.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- The box sill encloses the joists and is made of the same material, typically 2 × 10 lumber.
- In locations subject to earthquakes, tornadoes, or hurricanes, metal fasteners may be required to attach the joist header and end joists to the sill.



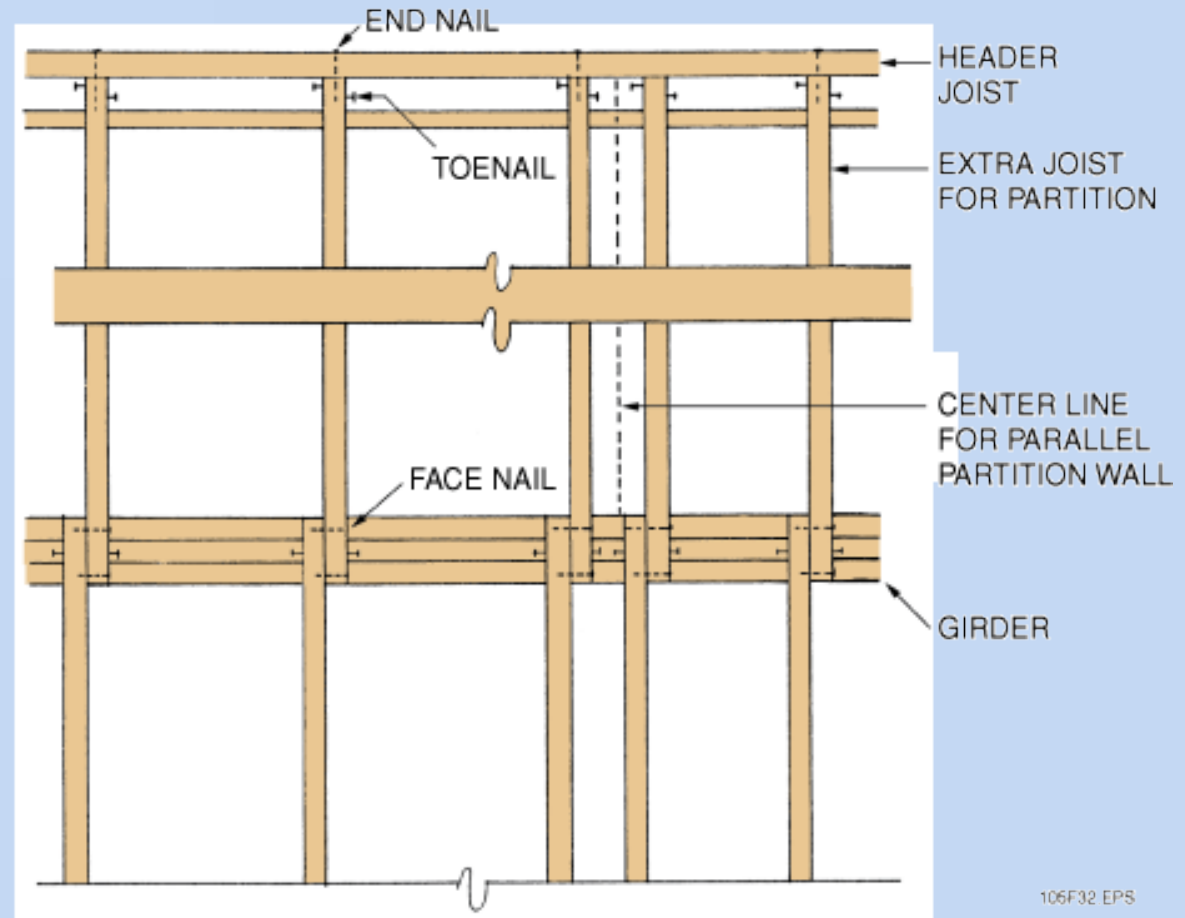
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Figure 31 Box sill installed on foundation.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- When installing joists, make sure the crown is up. The joists are nailed to the header and toenailed to the sill.
- Joists are face-nailed where they overlap on the girder.
- Splices in the header can be joined with a scab.



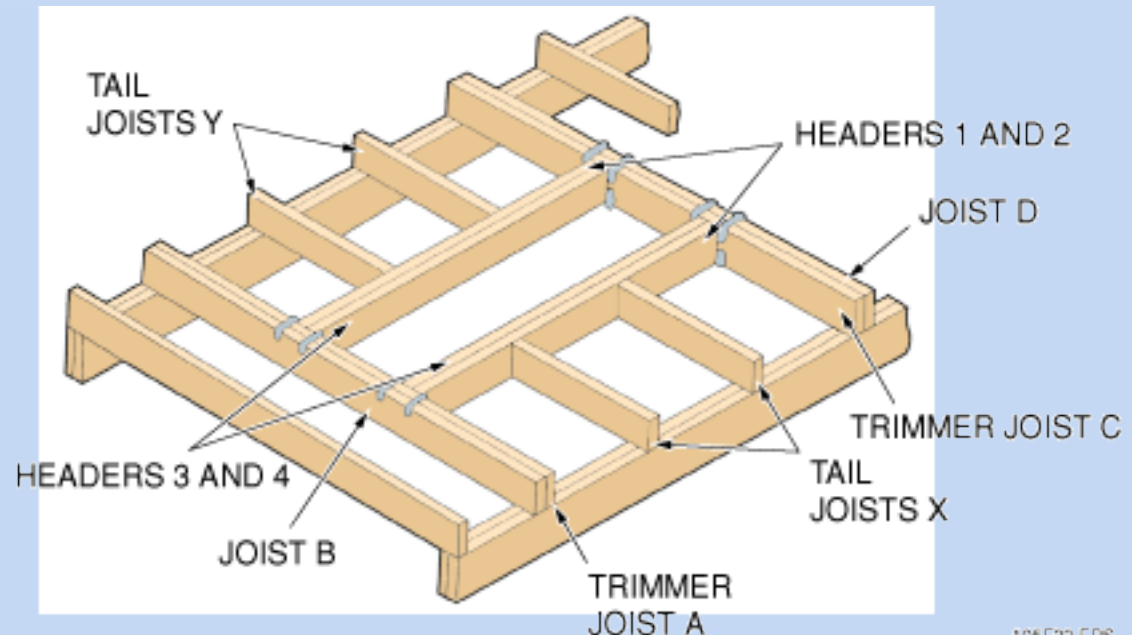
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Figure 32 Installing joists.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- Floor openings are framed with a combination of headers, trimmer joists, and tail joists.
- Trimmers and headers at openings must be nailed together in a sequence that prevents having to nail through a double thickness.
- Bridging is installed about every 8 feet, or in the middle of the joist span.
- Wood cross-bridging is typically 1 × 4 lumber.



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Figure 32 Installing joists.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- A framing square can be used to lay out the bridging. Once the first one is done, it can be used as a template for the others.
- The bottom end of the bridging is not nailed until the subflooring has been installed.
- If solid wood bridging is used, it is usually staggered from one pair of joists to the next to permit end-nailing.

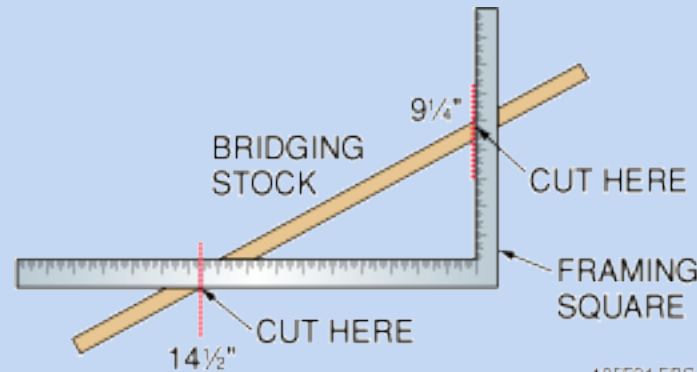
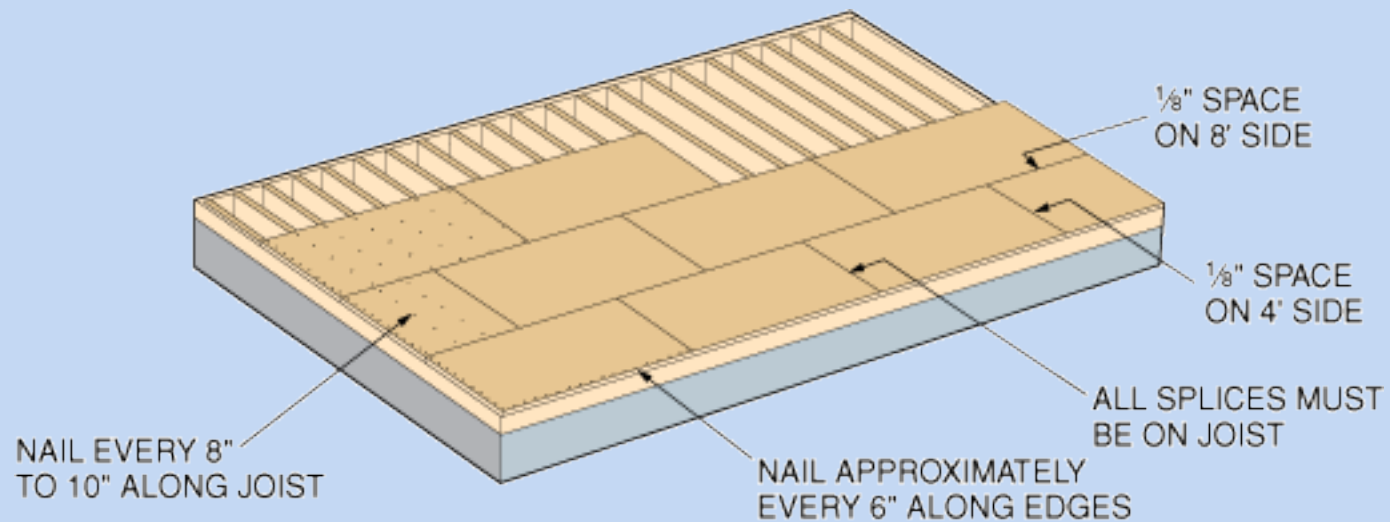


Figure 34 Framing square used to lay out cross-bridging.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- When installing plywood or OSB subflooring, the long side is run at right angles to the joists.
- When plywood is used, panels should be staggered, and at least 1/8 inch should be left at joints to account for expansion.
- Adjustment may be needed if the subflooring panel joints overlap a joist.



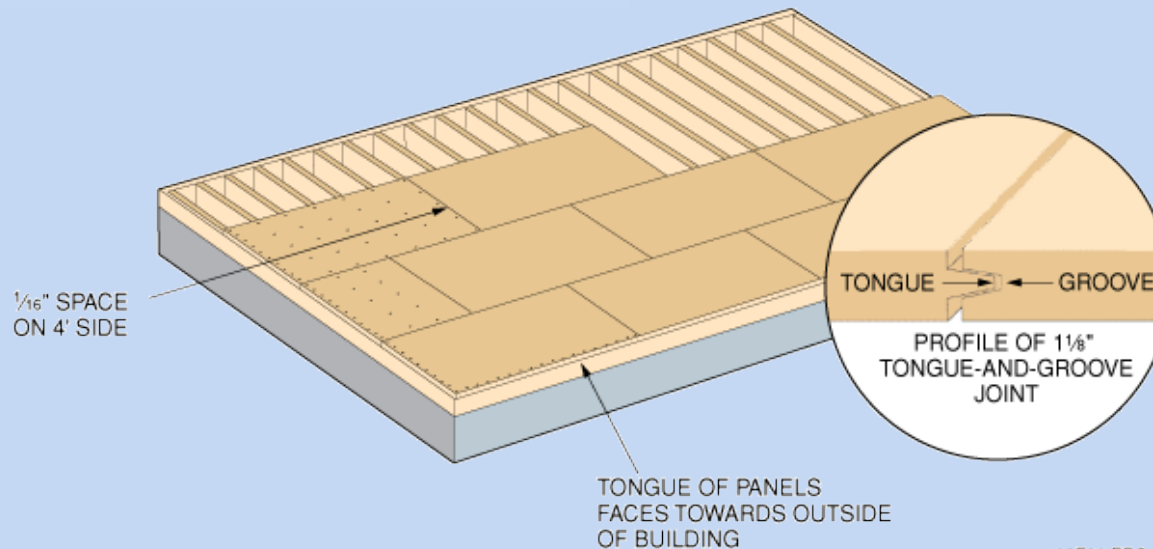
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Figure 35 Installing butt-joint floor panels.

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5.0.0 Laying Out and Constructing a Platform Floor Assembly

- When using tongue-and-groove panels, start with the tongue of the first course facing the outside of the building, so that the tongue edges of later courses do not have to be struck.
- Leave the last 6 inches of the panels un-nailed to make it easier to fit the next panel.



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Figure 35 Installing butt-joint floor panels.

MODULE 27105, Part 3



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SLIDE 39B

5.0.0 Laying Out and Constructing a Platform Floor Assembly



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End of Presentation